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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,606	04/11/2005	Michael Vajdy	PP18892.003	9598

27476 7590 12/19/2006

NOVARTIS VACCINES AND DIAGNOSTICS INC.
CORPORATE INTELLECTUAL PROPERTY R338
P.O. BOX 8097
Emeryville, CA 94662-8097

EXAMINER	
SNYDER, STUART	
ART UNIT	**PAPER NUMBER**
1648	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/19/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/501,606	VAJDY ET AL.	
	Examiner	Art Unit	
	Stuart W. Snyder	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) *3,17-31 and 37-40* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-16 and 32-35* is/are rejected.

7)☒ Claim(s) *36* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. **Status of claims**: Claims 1-40 are pending. Claims 3, 17-31 and 37-40 have been withdrawn from consideration and claims 1, 2, 4-16 and 32-36 are under active examination.

   Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

2. **Rejection of Claims 1, 2, 4-10 and 13-16 Under 35 USC § 103:** The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

   Claims 1, 2, 4-10 and 13-16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Vajdy, *et al.* in view of Keefer MC, *et al.*

   Claims 1, 2, 4-10, and 13-16 are drawn to a composition comprising an HIV envelope antigen optimized for immunogenicity, a second HIV antigen optimized for immunogenicity limited in claim 10 to be the *gag* gene product and combined with adjuvant protein, LTK63.

   Applicants rebutted the rejection for the following reasons: Vajdy et al. does not teach **any** amounts of HIV envelope to be used in combination with LTK63 adjuvant, Keefer, et al. does not teach concentrations of HIV envelope **when used with LTK63 adjuvant**, Keefer et al. teaches away from using **less that 640 μg of an HIV envelope**-containing composition because lower amounts are less immunogenic, and that because compositions comprising specific amounts of LTK63 and an HIV envelope are not taught

by either reference **it is not obvious** to attempt to determine optimal dosages of each in combination.

The examiner has considered the rebuttal arguments and found them unpersuasive for reasons of record and the following: Applicants and the Examiner both cite MPEP § 2144.05 in support their respective arguments related to the obviousness of optimization of dosages. Applicants' specification fail to teach, "that the particular range is critical...by showing that the claimed rage achieves unexpected results relative to the prior art range". In fact, although only a single concentration of Envelope protein was used for the exemplary experiments, applicants claimed a range of concentrations. Applicants' rebuttal also failed to demonstrate the criticality of the claimed range. Thus, optimizing the dosage within a certain range is indeed obvious; the rejection is proper, and is maintained.

3. **Rejection of Claims 1, 11, and 12 Under 35 U.S.C. § 103**: Rejection of claims 1, 11, and 12 under 35 U.S.C. 103(a) as being unpatentable over Vajdy, *et al.* in view of Keefer as applied to claims 1, 2, 4-10 and 13-16 above, and further in view of Kumar and Narayan, Haynes, Kang *et al.*, Tobery and Siliciano, Cease and Berzofsky and Vogel is maintained.

Claims 1, 11 and 12 are drawn to a composition of HIV envelope protein, a detoxified E. coli heat-labile toxin LTK63 and other HIV-derived regulatory or accessory proteins. The Examiner previously rejected these claims because: Vajdy, *et al.* teaches the combination of envelope-based compositions using LTK63 as adjuvant; Keefer *et al.* teaches concentrations of envelope within the claimed range; Kumar and Narayan also

teaches compositions containing envelope within the claimed concentration range and inclusion of HIV *env, tat, rev,* and *vpu* in an envelope-containing composition; Haynes teaches compositions of envelope in combination with other HIV proteins including *gag*- and *pol*-derived proteins; Kang *et al.* teach compositions of env- and gag-derived protein-containing virus-like particles; Tobery and Siliciano teach the use of envelope and gag proteins; Vogel teaches the importance of achieving immunological activation of both the humoral and cell-mediated arms of the immune system by judiciously choosing adjuvant and inoculation route. In light of the papers cited above and those cited by the previous examiner, it would indeed be obvious to one ordinarily skilled in the art of vaccinology to combine one or more HIV antigens with a mucosal adjuvant such as LTK63 to broaden the scope of the immune response.

Applicants rebut the rejection based on the citations failure to teach: Recited amounts of HIV envelope **antigen**; compositions comprising HIV envelope, LTK63, and accessory or regulatory proteins because none of the secondary references disclose or suggest LTK63; and insufficient motivation to combine the methods.

Applicants' arguments have been duly considered and found nonpersuasive for reasons of record and the following: The arguments regarding obviousness of the amounts of envelope proteins are given above; the obviousness of combining constituents of compositions was previously stated and reiterated herein, "the MPEP in section 2144.06 states, in part:

> "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a

> third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980)...";

and motivation for combining methods are not those of the Applicant, but rather "...there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings..." (see MPEP 706.02(j)). As previously noted by the Examiner, the motivation to combine suggested in the prior art includes broadening the scope of the immune response including greater antigenic diversity and inclusion of humoral and mucosal responses; the motivation shared by applicant as evidenced by the specification, the language of the claims, and Applicants' prior art.

Thus, rejection of claims 1, 11, and 12 under 35 U.S.C. 103(a) as being unpatentable over Vajdy, *et al.* in view of Keefer as applied to claims 1, 2, 4-10 and 13-16 above, and further in view of Kumar and Narayan, Haynes, Kang *et al.*, Tobery and Siliciano, Cease and Berzofsky and Vogel, is proper, and is maintained.

4. **Rejection of Claims 32-35 Under 35 U.S.C. § 103**: Rejection of Claims 32-35 under 35 U.S.C. 103(a) as being unpatentable over Vajdy, *et al.* in view of Keefer as applied to claims 1, 2, 4-10 and 13-16 above, and further in view of Kumar and Narayan is maintained.

Claims 32-36 are drawn to a composition of HIV envelope protein and a detoxified E. coli heat-labile toxin; claim 32 limits the amount of HIV envelope antigen to a range of between 1-300 μg, claim 33 further limits claim 32 to about 100 μg, claim 34 is a repetition of claim 33 in a different form, claim 35 limits claim 5 by identifying the HIV envelope antigen as Ogp140 and in the amount of about 300 μg, and claim 36 identifies an amino acid substitution of Ogp140 relative to native *env* gene products.

Previously, the Examiner rejected the claims because: Vajdy *et al* teaches a composition comprising HIV envelope protein (both gp120 and Ogp140) and an LTK63 adjuvant; Kumar and Narayan further teaches compositions comprising gp120 at a dosages in the amount of 50 and 100 μg per inoculation or arguably about 1-300 μg per inoculation.

Applicants attempt to rebut the rejection by repeating their arguments about the mass of envelope in the composition, lack of motivation of combining references, and the uniqueness of the mutant Ogp140 of claim 36.

The Examiner has duly considered Applicants' arguments and found them nonpersuasive, with the exception of those related to the Ogp140 mutated at the primary protease cleavage site, for reasons of record and those given above concerning the mass of envelope in the composition and the motivation for combining references. Thus, rejection of Claims 32-35 under 35 U.S.C. 103(a) as being unpatentable over Vajdy, *et al.* in view of Keefer as applied to claims 1, 2, 4-10 and 13-16 above, and further in view of Kumar and Narayan is proper, and is maintained.

Claim Objections

5. Claim 36 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

7. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stuart W. Snyder whose telephone number is (571) 272-9945. The examiner can normally be reached on Mondays through Fridays between the hours of 9:00 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce R. Campell can be reached on (571) 272-0974. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SWS

Bruce Campell

BRUCE R. CAMPELL, PH.D
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600